

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) Medical or dental handpiece ~~(1) having~~
comprising a treatment tool driven by ~~means of~~ a drive part ~~(11)~~ via a transmission
arrangement ~~(5)~~,

~~wherein~~ the transmission arrangement ~~(5) contains~~ containing at least two
planetary ~~transmissions (20, 30)~~ transmission stages connected one after another, each
which ~~each have~~ has

- a sun gear ~~(22, 32)~~ mounted on a drive shaft ~~(21, 31)~~,

- a planetary gear carrier ~~(23, 33)~~ having a plurality of uniformly distributed
planetary gears ~~(24, 34)~~ cooperating with the sun gear ~~(22, 32)~~, and

- a hollow gear ~~(25, 35)~~, fixed to a housing, surrounding the planetary gears
~~(24, 34)~~, and having an inner toothing ~~(26, 36)~~,

~~and wherein~~ the planetary gear carrier ~~(23)~~ of at least one transmission stage
~~(20) serves~~ serving as drive shaft ~~(31)~~ and carrier of the sun gear ~~(32)~~ of ~~the a~~
following transmission stage ~~(30)~~,

~~characterized in that,~~ wherein

the drive shaft ~~(21, 31)~~ for each transmission stage ~~(20, 30)~~ is extended
extends beyond the sun gear ~~(22, 32)~~ driven thereby and ~~in that~~ the planetary gear
carrier ~~(23, 33) belonging to~~ associated with this sun gear ~~(22, 32)~~ is arranged
rotatably on the extension of said drive shaft.

2. (Currently Amended) Medical or dental handpiece according to claim 1,

~~characterized in that,~~ wherein

the planetary gear carriers (23, 33) of all transmission stages (20, 30) are ~~formed as~~ hollow shafts and the extension of the drive shaft (21) for the first transmission stage (20) extends ~~in substance~~ substantially over the entire length of the transmission arrangement (5), centrally through ~~the~~ openings of formed in the planetary gear carriers (23, 33).

3. (Currently Amended) Medical or dental handpiece according to claim 1 or 2,

~~characterized in that,~~ wherein

the planetary gear carriers (23, 33) are slidably mounted with respect to the drive shafts (21, 31) engaging therein.

4. (Currently Amended) Medical or dental handpiece according to ~~any~~ preceding claim 1,

~~characterized in that,~~ wherein

the sun gears (22, 32) and the planetary gears (24, 34) of the individual transmission stages (20, 30) have in each case identical dimensions.

5. (Currently Amended) Medical or dental handpiece according to claim 4,

~~characterized in that,~~ wherein

the hollow gears (25, 35) for all transmission stages (20, 30) are formed by means of a single sleeve-like component (40) having an inner toothing (41).

6. (Currently Amended) Medical or dental handpiece (1) ~~having~~ comprising a treatment tool driven by ~~means of~~ a drive part (11) via a transmission arrangement (5),

wherein the transmission arrangement (5) ~~contains~~ comprises at least two planetary ~~transmissions (20, 30)~~ transmission stages connected one after another, each ~~of which each have~~ has

- a sun gear (22, 32) mounted on a drive shaft (21, 31),
- a planetary gear carrier (23, 33) having three uniformly distributed planetary gears (24, 34) cooperating with the sun gear (22, 32), and
- a hollow gear (25, 35), fixed to a housing, surrounding the planetary gears (24, 34), and having an inner toothing (26, 36),

~~and wherein~~ the planetary gear carrier (23) of at least one transmission stage (20) ~~serves~~ serving as drive shaft (31) and carrier of the sun gear (32) of the following transmission stage (30),

~~characterized in that,~~ wherein

the hollow gears (25, 35) for all transmission stages (20, 30) are formed by ~~means of~~ a single sleeve-like component (40) having an inner toothing (41).

7. (Currently Amended) Medical or dental handpiece according to claim 6,

~~characterized in that,~~ wherein

the sun gears (22, 32) and the planetary gears (24, 34) of the individual transmission stages (20, 30) have in each case identical dimensions.

8. (Currently Amended) Medical or dental handpiece according to claim 6 or 7

~~characterized in that,~~ wherein

the drive shaft (21, 31) for each transmission stage (20, 30) is extended beyond the sun gear (22, 32) driven thereby and ~~in that~~ the planetary gear carrier (23, 33) ~~belonging to~~ associated with this sun gear (22, 32) is arranged rotatably on the extension.

9. (Currently Amended) Medical or dental handpiece according to claim 8

~~characterized in that,~~ wherein

the planetary gear carriers (23, 33) of all transmission stages (20, 30) are formed as hollow shafts and the extension of the drive shaft (21) for the first transmission stage (20) extends ~~in substance~~ substantially over the entire length of the transmission arrangement (5), centrally through the openings of formed in the planetary gear carriers (23, 33).

10. Medical or dental handpiece according to claim 8 ~~or 9~~
~~characterized in that, wherein~~
the planetary gear carriers (23, 33) are slidingly mounted with respect to the
drive shafts (21, 31) engaging therein.

11. (Currently Amended) Medical or dental handpiece according to ~~any~~
~~preceding claim 1,~~

~~characterized in that, wherein either or both of the handpiece and the~~
transmission arrangement has or have a respective housing and

the drive shaft (21) for the first transmission stage (20) is mounted with
respect to the handpiece housing (2) or a transmission housing (9) by ~~means of~~ a ball
bearing (6).

12. (Currently Amended) Medical or dental handpiece according to ~~any~~
~~preceding claim 1,~~

~~characterized in that, wherein either or both of the handpiece and the~~
transmission arrangement has or have a respective housing and

the planetary gear carrier (33) of the last transmission stage (30) is mounted
with respect to the handpiece housing (2) or a transmission housing (9) by means of at
least one ball bearing (7, 8).

13. (Currently Amended) Medical or dental handpiece according to ~~any~~ preceding claim 1,

~~characterized in that,~~ wherein

the planetary gear carriers (23, 33) of the transmission stages (20, 30) in each case carry three planetary gears (24, 34).

14. (Currently Amended) Medical or dental handpiece according to ~~any~~ preceding claim 1,

~~characterized in that,~~ wherein

components of the transmission stages (20, 30) are at least partially of a comprise ceramic material.

15. (Currently Amended) Medical or dental handpiece according to claim 14,

~~characterized in that,~~ wherein

the drive shafts (21, 31) or planetary gear carriers (23, 33) of the transmission stages (20, 30) ~~are of~~ comprise a ceramic material.

16. (Currently Amended) Medical or dental handpiece according to claim 14 ~~or 15~~,

~~characterized in that,~~ wherein

the gears (22, 24, 32, 34) of the transmission stages (20, 30) ~~are of~~ comprise a ceramic material.

17. (Currently Amended) Medical or dental handpiece according to ~~any of~~
~~claims claim~~ 14 to 16,

~~characterized in that,~~ wherein

the ceramic material is silicon nitride.

18. (Currently Amended) Medical or dental handpiece according to ~~any~~
~~preceeding~~ claim 1,

~~characterized in that,~~ wherein

the transmission arrangement (5) is of two planetary transmissions (20, 30)
connected one after the other.

19. (Currently Amended) Medical or dental handpiece according to ~~any~~
~~preceeding~~ claim 1,

~~characterized in that,~~ wherein

the transmission stages (20, 30) have in each case a transmission ratio of 3:1.

20. (Currently Amended) Medical or dental handpiece according to ~~any~~
~~preceeding~~ claim 1,

~~characterized in that,~~ wherein

the components of the transmission arrangement (5) are arranged in a sleeve-
like transmission housing (9) ~~formed sleeve like~~.

21. (Currently Amended) Medical or dental handpiece according to claim 20,

~~characterized in that,~~ wherein

the transmission arrangement (5) can be emplaced in the handpiece (1), or removed therefrom, as a structural unit.

22. (Currently Amended) Medical or dental handpiece (1) ~~having~~ comprising a treatment tool driven by ~~means of~~ a drive part (11) via a transmission arrangement (5),

wherein the transmission arrangement (5) contains at least one planetary transmission (20, 30), which has

- a sun gear (22, 32) mounted on a drive shaft (21, 31),
- a planetary gear carrier (23, 33) having a plurality of uniformly distributed planetary gears (24, 34) cooperating with the sun gear (22, 32), and
- a hollow gear (25, 35), fixed to a housing, surrounding the planetary gears (24, 34), and having an inner toothing (26, 36),

~~characterized in that,~~ and wherein

components of the planetary transmission (20, 30) ~~are at least partially of a~~ comprise ceramic material.

23. (Currently Amended) Medical or dental handpiece according to claim 22,

~~characterized in that,~~ wherein

the drive shaft (21, 31) or planetary gear carrier (23, 33) of the planetary transmission (20, 30) ~~is of~~ comprises a ceramic material.

24. (Currently Amended) Medical or dental handpiece according to claim 22 ~~or 23~~,

~~characterized in that,~~ wherein

the gears (22, 24, 32, 34) of the planetary transmission (20, 30) ~~are of~~
comprises a ceramic material.

25. (Currently Amended) Medical or dental handpiece according to ~~any of~~
~~claims~~ claim 22 ~~to 24~~,

~~characterized in that,~~ wherein

the ceramic material is silicon nitride.

26. (Currently Amended) Transmission arrangement ~~(5)~~ for a medical or dental handpiece ~~(1)~~, for the production of a drive connection between a drive part ~~(11)~~ and a treatment tool,

wherein the transmission arrangement ~~(5)~~ ~~contains~~ comprises at least two planetary ~~transmissions (20, 30)~~ transmission stages connected one after another, each ~~of which each have~~ has

- a sun gear ~~(22, 32)~~ mounted on a drive shaft ~~(21, 31)~~,
- a planetary gear carrier ~~(23, 33)~~ having three uniformly distributed planetary gears ~~(24, 34)~~ cooperating with the sun gear ~~(22, 32)~~, and
- a hollow gear ~~(25, 35)~~, fixed to a housing, surrounding the planetary gears ~~(24, 34)~~, having an inner toothing ~~(26, 36)~~,

and wherein the planetary gear carrier ~~(23)~~ of at least one transmission stage ~~(20)~~ serves as drive shaft ~~(31)~~ and carrier of the sun gear ~~(32)~~ of the following transmission stage ~~(30)~~,

~~characterized in that,~~ wherein

the drive shaft ~~(21, 31)~~ for each transmission stage ~~(20, 30)~~ is extended beyond the sun gear ~~(22, 32)~~ driven thereby and in ~~that~~ the planetary gear carrier ~~(23, 33)~~ belonging to this sun gear ~~(22, 32)~~ is arranged rotatably on the extension.

27. (Currently Amended) Medical or dental handpiece according to claim 26,

~~characterized in that,~~ wherein

the planetary gear carriers (23, 33) of all transmission stages (20, 30) are ~~formed as~~ hollow shafts and the extension of the drive shaft (21) for the first transmission stage (20) extends ~~in substance~~ substantially over the entire length of the transmission arrangement (5), centrally through the openings of formed in the planetary gear carriers (23, 33).

28. (Currently Amended) Transmission arrangement (5) for a medical or dental handpiece (1), for the production of a drive connection between a drive part (11) and a treatment tool,

wherein the transmission arrangement (5) ~~contains~~ comprises at least two planetary ~~transmissions (20, 30)~~ transmission stages connected one after another, each which ~~each have~~ has

- a sun gear (22, 32) mounted on a drive shaft (21, 31),
- a planetary gear carrier (23, 33) having three uniformly distributed planetary gears (24, 34) cooperating with the sun gear (22, 32), and
- a hollow gear (25, 35), fixed to a housing, surrounding the planetary gears (24, 34), and having an inner toothing (26, 36),

and wherein the planetary gear carrier (23) of at least one transmission stage (20) serves as drive shaft (31) and carrier of the sun gear (32) of the following transmission stage (30),

~~characterized in that,~~ wherein

the hollow gears ~~(25, 35)~~ for all transmission stages ~~(20, 30)~~ are formed by ~~means of~~ a single sleeve-like component (40) having an inner toothing (41).

29. (Currently Amended) Transmission arrangement ~~(5)~~ for a medical or dental handpiece (1), for the production of a drive connection between a drive part ~~(11)~~ and a treatment tool,

wherein the transmission arrangement ~~(5) contains~~ comprises at least one planetary transmission ~~(20, 30)~~, which has

- a sun gear ~~(22, 32)~~ mounted on a drive shaft ~~(21, 31)~~,
- a planetary gear carrier ~~(23, 33)~~ having a plurality of uniformly distributed planetary gears ~~(24, 34)~~ cooperating with the sun gear ~~(22, 32)~~, and
- a hollow gear ~~(25, 35)~~, fixed to a housing, surrounding the planetary gears ~~(24, 34)~~, having an inner toothing ~~(26, 36)~~,

~~characterized in that,~~ wherein

components of the planetary transmission ~~(20, 30)~~ are at least partially of comprise a ceramic material.

30. (Currently Amended) Transmission arrangement according to claim 29,

~~characterized in that,~~ wherein

the ceramic material is silicon nitride.